

### DECLARATION

Hon'ble Commissioner of Patent, Washington DC 20231

Sir,

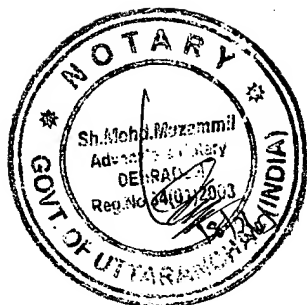
I, Gautam Das, do hereby declare as follows :

1. We have compared impregnation time for 0.1wt% of catalyst impregnated on activated charcoal. The time taken for our dichloro cobalt phthalocyanine catalyst was found to be 20 min, whereas the same for commercial sulfonated cobalt phthalocyanine catalyst remained 55 min. These data show that our dichloro cobalt phthalocyanine catalyst has better impregnation characteristics as compared to commercial sulfonated cobalt phthalocyanine catalyst.
2. We have compared the solubility characteristics of our dichloro cobalt phthalocyanine catalyst with commercial sulfonated cobalt phthalocyanine catalyst and the data are as follows:

### Solubility Data

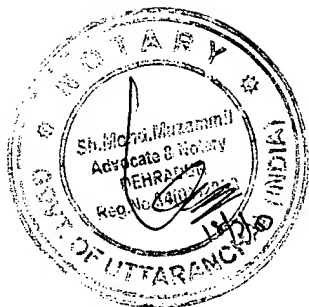
Catalyst	Solubility in 0.3wt% alkaline methanol, gm/lit	Solubility in 0% aqueous ammonium, gm/lit
Dichloro Cobalt phthalocyanine	3.4	Negligible
Commercial Sulfonated Cobalt Phthalocyanine	0.6	2.4

*Gautam Das*



: : 2 : :

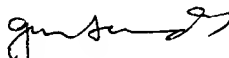
As our dichloro cobalt Phthalocyanine catalyst is not soluble in 0.2wt% aqueous ammonia, it was impregnated on charcoal bed by using 0.3wt% alkaline methanol.



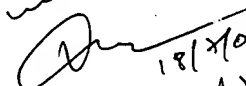
3. As the solubility of our dichloro cobalt Phthalocyanine catalyst in aqueous alkaline media is negligible, there is practically no chance of its leaching out by aqueous alkaline solution from the impregnated bed. Therefore retention of our cobalt Phthalocyanine catalyst is better than commercial sulfonated cobalt phthalocyanine catalyst which is highly soluble in aqueous alkaline solution. This has also been confirmed by long run of sweetening of kerosene in a laboratory bench scale unit under same conditions.

ATTESTED

Sh. Mohd. Muzammil  
Advocate & Notary  
Reg. No. 34(01)/2003

  
(Dr. Gautam Das)

Indian Institute of  
Petroleum, Dehradun.  
248095 (INDIA)

Signatures Identified  
by me  
  
18/10/03  
(P. J. CHANDRA  
Adv.)